REMARKS

Claims 1-22 are currently present in the application. In the Office Action, Claims 1-18 are rejected under 35 U.S.C. § 103(a) as allegedly being obvious over U.S. Patent No. 5,852,485 to Shimida, et al. Claims 19-21 and 24-25 are rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Shimida in view of U.S. Patent 6,023,317 to Xu et al., and U.S. Patent 5,677,747 to Ishikawa et al. Claims 19-21 and 24-25 are also rejected under 35 U.S.C. § 103(a) as being obvious over Shimida in view of U.S. Patent 6,160,604 to Murai, et al. No action is given on the merits of Claims 22-23.

In response to the Examiner's invitation, the specification has been carefully reviewed and several minor informalities have been noted and corrected by the above amendments. No new matter has been added.

In the Drawings, reference numerals associated with Figs. 8A-E, 10A-B, 11A-B have been corrected. Further, conforming amendments have been made to the specification to insert reference numerals where appropriate. Additionally, the optical compensation film described, among other places, at page 40, line 5 of the original specification, has been given reference numeral 121, and depicted in the proposed amendments to Figs. 1A and 9A. No new matter has been added. A Request for Approval of Drawing Changes is filed herewith under separate cover.

No indication of approval or disapproval of the Request for Approval of Drawing Changes, filed 27 August 2001, has been given with the most recent office action. The changes proposed therein, responsive to the Examiner's requirements in the preceding Office Action, are incorporated into the presently filed Request.

Claims 23-25 are cancelled by the above amendment without prejudice or disclaimer to their later presentation in this or a divisional application. Specifically, a provisional double patenting rejection has been made in the co-pending application No. 09/852,077 over claims 24-25 of the instant application. The complete subject matter of Claims 24-25 will be claimed in the co-pending divisional application to obviate the double patenting rejection. Claim 23, which is, in many respects, similar to Claim 26 of the co-pending divisional application, will also be introduced into that application. No subject matter has been surrendered or disclaimed by this amendment.

Claims 1 and 10 have been amended to recite, *inter alia*, a light shielding portion formed above the thin film transistor. This limitation finds support in the original specification, among other places, at page p. 9, lines 17-18, and in Figs. 1A and 2E. No new matter has been added. This feature is neither taught nor suggested in the prior art. As admitted in the most recent office action, a further refinement of this feature, i.e. where the thin film transistor is hidden from view by a common electrode, is neither taught nor suggested by the prior art, taken alone or in combination (Office Action, p. 3).

Applicants respectfully submit that the reliance on *in re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980), to support a theory of obviousness is misplaced. Legal precedent can provide the rationale supporting obviousness only if the facts in the case are sufficiently similar to those in the application (M.P.E.P. 8th, § 2144). "The obligation of the decision maker is to apply the law consistently to the evidence for each new invention. All relevant facts must be considered, while recognizing that it is inappropriate to 'squeez[e] new factual situations into preestablished pigeonholes.'" *In re Eli Lilly & Co.*, 902 F.2d 943, 14 USPQ2d 1741, 1745 (Fed. Cir., 1990) (quoting *in re*

Yates, 663 F.2d 1054, 1056 n.4, 211 USPQ 1149, 1151 n.4. (CCPA, 1981)) The facts of the instant application are too far removed from *Boesch* to properly rely on its holding alone to support an finding of obviousness in this case. Specifically at issue in *Boesch* was the percentage aluminum, titanium, and cobalt content in a nickel-based alloy, where the composition requirements of the claims and the prior art overlapped. This holding, in a case involving metallurgical compositions, is hardly applicable to support the proposition that the inventive positioning of elements in a microelectronic component such as the liquid crystal display device of the instant invention is similarly obvious, when no prior art teaching shows such an arrangement.

Further distinguishing the present case from *Boesch* is that the holding in *Boesch* relied upon a prior art reference teaching a known range of variables that included those claimed. In the most recent Office Action, no equivalent prior art reference is offered to support the alleged relocation. For at least the foregoing reasons, Applicants respectfully submit that Claims 1 and 10 are patentably distinguished over the prior art, and kindly request the rejections be reconsidered and withdrawn.

Specifically regarding Claims 8, 9, 17 and 18, it is disclosed in the specification (See p. 23, lines 1-3) that the claimed obscuring location of the common electrode eliminates the need for a separate light shielding layer in the color filter layer, simplifying construction. The omission of an element and the **retention** of its function is indicia of non-obviousness. *See, In re Edge*, 359 F.2d 896, 149 USPQ 556 (CCPA 1966). Therefore, Applicants respectfully submit that Claims 8, 9, 17 and 18 are separately patentable over the prior art, and kindly request the rejections be reconsidered and withdrawn.

Claim 3 has been amended to be dependent from Claim 1, deleting redundant limitations. Claims 4, 5, 13 and 14 have been amended into independent form, including the limitations of their previous base claims as originally constituted. In addition, Claims 4 and 13 have been amended to recite, *inter alia*, the interlayer separation film is formed both on the common electrode and on the overcoat layer. This limitation finds support in the original specification as filed, among other places, in Figs. 7A-C, and the accompanying descriptions beginning at page 26, line 9. No new matter has been added.

As disclosed in the specification, in invention according to Claims 4 and 13 advantageously prevent the pixel electrode and the common electrode from being short-circuited with one another. This structure is neither taught nor suggested in the prior art, which is noted in the Office Action (page 3). To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. See *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974).

Further, to establish *prima facie* obviousness there must be some suggestion or motivation to modify the reference. *See, In re Rouffet*, 149 F.3d 1350, 1355, 47 USPQ2d 1453, 1457 (Fed. Cir. 1998). The Office Action improperly relies solely on the skill of the ordinarily skilled artisan to provide such suggestion or motivation (p. 3, first full para.). "Rarely, however, will the skill in the art component operate to supply missing knowledge or prior art to reach an obviousness judgment." *Al-Site Corp. v. VSI International Inc.*, 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999). Lacking a suggestion or motivation to modify Shimida in the manner alleged in the Office Action, Applicants respectfully submit that a *prima facie* showing of obviousness has not been

made. Therefore, Applicants respectfully submit that Claims 4 and 13 are patentable over the prior art, and kindly request the rejections be reconsidered and withdrawn.

Claims 5 and 14 have been further amended to recite, *inter alia*, an interlayer separation film between the common electrode and pixel electrode being formed on the pixel electrode and on an overcoat layer, and the common electrode being formed on the interlayer separation film. This limitation finds support in the original specification as filed, among other places, in Figs. 5A-C, and the accompanying descriptions beginning at page 23, line 14. No new matter has been added.

As highlighted above regarding Claims 4 and 13, Shimida lacks any teaching or suggestion to add an interlayer separation film. Further, there is no suggestion or motivation in the prior art to modify Shimida to arrive at the claimed invention. Therefore, Applicants respectfully submit that Claims 5 and 14 are patentable over the prior art, and kindly request the rejections be reconsidered and withdrawn.

Furthermore, according to Claims 10-22, the liquid crystal is oriented substantially vertically before any voltage is applied thereto. This feature also, is neither taught nor suggested in the prior art, taken alone or in combination. Therefore, Applicants respectfully submit that Claims 10-22 are further patentably defined over the prior art, and kindly request the rejections be reconsidered and withdrawn.

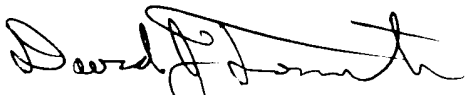
Regarding Claims 19-21, Xu is offered for its teaching of the use of positive and negative retardation films for improving display contrast. Ishikawa is offered for its teaching of forming a pre-tilt angle by rubbing in a specific direction. However, neither reference offers any teaching or suggestion to ameliorate the deficiencies of Shimida with respect to the underlying claims. Therefore, Applicants respectfully submit that Claims

19-21 are further patentably defined over the prior art, and kindly request the rejections be reconsidered and withdrawn.

Regarding Claim 22, though no statement of rejection is made, Murai was offered in the most recent Office Action for its teaching of introducing organic material into the liquid crystal layer. However, like Xu and Ishikawa, Murai offers no teaching or suggestion to ameliorate the deficiencies of Shimida with respect to the underlying claims. Therefore, Applicants respectfully submit that Claim 22 is further patentably defined over the prior art.

The foregoing remarks have established the patentability of independent claims 1, 4, 5, 10, 13 and 14, as well as the separate patentability of dependent claims 7, 8, 11, 12, and 15-22. Dependent claims not specifically addressed are submitted as patentable for at least the same reasons as the claims from which they depend. Therefore, Applicants respectfully submit that all claims define patentable subject matter, and kindly solicit an early indication of allowability.

Respectfully Submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Please cancel claims 23-25 without prejudice or disclaimer:

Please cancel claims 26-39 without prejudice or disclaimer:

Please amend claims 1, 3-5, 10, 12-15, 20-21:

1. (Amended) A liquid crystal display device having a transparent first substrate, a transparent second substrate, and a liquid crystal layer and a color filter layer sandwiched between the first and second substrates, comprising:

said color filter layer disposed on said first substrate;

said liquid crystal layer disposed between said color filter layer and said second substrate;

plural scan signal electrodes, video signal electrodes for crossing said scan signal electrodes in a matrix form and plural thin film transistors formed in association with the crossing points between said scan signal electrodes and said video signal electrodes provided on said first substrate below said color filter layer;

at least one pixel formed in each of areas surrounded by said plural scan signal electrodes and said video signal electrodes;

each pixel provided with a common electrode which is connected over plural pixels through a common electrode wire to supply reference potential, and a pixel electrode which is connected to the corresponding thin film transistor and disposed so as to confront said common electrode in said pixel area; and

said common electrode and said pixel electrode disposed between said

color filter layer and said liquid crystal layer;

wherein said common electrode and said pixel electrode are disposed in different layers through an interlayer separation film formed of a transparent insulating material, and

wherein electric field having a component which is dominantly parallel to said first substrate is produced in said liquid crystal layer by applying a voltage across said common electrode and said pixel electrode, [and]

wherein the liquid crystal before the voltage is applied thereto is oriented substantially in parallel to said first substrate; and

wherein a light shielding portion is formed above said thin film transistor.

3. (Twice Amended) [A] The liquid crystal display device as claimed in claim 1 [having a transparent first substrate, a transparent second substrate, and a liquid crystal layer and a color filter layer sandwiched between the first and second substrates, comprising:]

[said color filter layer disposed on said first substrate;]

[said liquid crystal layer disposed between said color filter layer and said second substrate;]

[plural scan signal electrodes, video signal electrodes for crossing said scan signal electrodes in a matrix form and plural thin film transistors formed in association with the crossing points between said scan signal electrodes and said video signal electrodes provided on said first substrate below said color filter layer;]

[at least one pixel formed in each of areas surrounded by said plural scan signal electrodes and said video signal electrodes;]

[each pixel provided with a common electrode which is connected over plural pixels through a common electrode wire to supply reference potential, and a pixel electrode which is connected to the corresponding thin film transistor and disposed so as to confront said common electrode in said pixel area; and]

[said common electrode and said pixel electrode disposed between said color filter layer and said liquid crystal layer;]

[wherein said common electrode and said pixel electrode are disposed in different layers through an interlayer separation film formed of a transparent insulating material,]

[wherein electric field having a component which is dominantly parallel to said first substrate is produced in said liquid crystal layer by applying a voltage across said common electrode and said pixel electrode, and]

[liquid crystal before the voltage is applied thereto is orientated substantially in parallel to said first substrate; and]

wherein said interlayer separation film is formed on said common electrode, and said pixel electrode is formed on said interlayer separation film.

4. (Twice Amended) The liquid crystal display device [as claimed in claim 1,] <u>having a transparent first substrate, a transparent second substrate, and a liquid crystal layer and a color filter layer sandwiched between the first and second substrates, comprising:</u>

<u>said color filter layer disposed on said first substrate;</u>

<u>said liquid crystal layer disposed between said color filter layer and said second substrate;</u>

plural scan signal electrodes, video signal electrodes for crossing said scan signal electrodes in a matrix form and plural thin film transistors formed in association with the crossing points between said scan signal electrodes and said video signal electrodes provided on said first substrate below said color filter layer;

at least one pixel formed in each of areas surrounded by said plural scan signal electrodes and said video signal electrodes;

each pixel provided with a common electrode which is connected over plural pixels through a common electrode wire to supply reference potential,and a pixel electrode which is connected to the corresponding thin film transistor and disposed so as to confront said common electrode in said pixel area; and

said common electrode and said pixel electrode disposed between said color filter layer and said liquid crystal layer;

wherein said common electrode and said pixel electrode are disposed in different layers through an interlayer separation film formed of a transparent insulating material, and

wherein electric field having a component which is dominantly parallel to said first substrate is produced in said liquid crystal layer by applying a voltage across said common electrode and said pixel electrode,

wherein the liquid crystal before the voltage is applied thereto is orientated substantially in parallel to said first substrate; and

wherein an overcoat layer for protecting said color filter layer is formed on said color filter layer, said interlayer separation film is formed on said common electrode and on said overcoat layer, and said pixel electrode is formed on said interlayer

separation film.

5. (Twice Amended) The liquid crystal display device [as claimed in claim 1], having a transparent first substrate, a transparent second substrate, and a liquid crystal layer and a color filter layer sandwiched between the first and second substrates, comprising:

said color filter layer disposed on said first substrate;

said liquid crystal layer disposed between said color filter layer and said second substrate;

plural scan signal electrodes, video signal electrodes for crossing said scan signal electrodes in a matrix form and plural thin film transistors formed in association with the crossing points between said scan signal electrodes and said video signal electrodes provided on said first substrate

at least one pixel formed in each of areas surrounded by said plural scan signal electrodes and said video signal electrodes;

each pixel provided with a common electrode which is connected over plural pixels through a common electrode wire to supply reference potential, and a pixel electrode which is connected to the corresponding thin film transistor and disposed so as to confront said common electrode in said pixel area; and

said common electrode and said pixel electrode disposed between said color filter layer and said liquid crystal layer;

wherein said common electrode and said pixel electrode are disposed in different layers through an interlayer separation film formed of a transparent insulating material, and

wherein electric field having a component which is dominantly parallel to said first substrate is produced in said liquid crystal layer by applying a voltage across said common electrode and said pixel electrode,

wherein the liquid crystal before the voltage is applied thereto is orientated substantially in parallel to said first substrate; and

wherein an overcoat layer for protecting said color filter layer is formed on said color filter layer, said interlayer separation film is formed on said pixel electrode and on said overcoat layer, and said common electrode is formed on said interlayer separation film [and said pixel electrode is formed on said overcoat layer].

10. (Amended) A liquid crystal display device having a first transparent substrate, a second transparent substrate, and a liquid crystal layer and a color filter layer sandwiched between the first and second substrates, comprising:

said color filter layer disposed on said first substrate;

said liquid crystal layer disposed between said color filter layer and said second substrate;

plural scan signal electrodes, video signal electrodes for crossing said scan signal electrodes in a matrix form and plural thin film transistors formed in association with the crossing points between said scan signal electrodes and said video signal electrodes provided on said first substrate below said color filter layer;

at least one pixel formed in each of areas surrounded by said plural scan signal electrodes and said video signal electrodes;

each pixel provided with a common electrode which is connected over

plural pixels through a common electrode wire to supply reference potential[;] , and a pixel electrode which is connected to the corresponding thin film transistor and disposed so as to confront said common electrode in said pixel area;

said common electrode and said pixel electrode disposed between said color filter layer and said liquid crystal layer;

wherein said common electrode and said pixel electrode are disposed in different layers through an interlayer separation film formed of a transparent insulating material;

wherein electric field having a component which is dominantly parallel to said first substrate is produced in said liquid crystal layer by applying a voltage across said common electrode and said pixel electrode, [and]

wherein the liquid crystal before the voltage is applied thereto is orientated substantially vertically to said first substrate; and

wherein a light shielding portion is formed above said thin film transistor.

13. (Twice Amended) The liquid crystal display device [as claimed in claim 10] having a first transparent substrate, a second transparent substrate, and a liquid crystal layer and a color filter layer sandwiched between the first and second substrates, comprising:

said color filter layer disposed on said first substrate;

said liquid crystal layer disposed between said color filter layer and said second substrate;

plural scan signal electrodes, video signal electrodes for crossing said scan signal electrodes in a matrix form and plural thin film transistors formed in association

with the crossing points between said scan signal electrodes and said video signal electrodes provided on said first substrate below said color filter layer;

at least one pixel formed in each of areas surrounded by said plural scan signal electrodes and said video signal electrodes;

each pixel provided with a common electrode which is connected over plural pixels through a common electrode wire to supply reference potential, and a pixel electrode which is connected to the corresponding thin film transistor and disposed so as to confront said common electrode in said pixel area,

said common electrode and said pixel electrode disposed between said color filter layer and said liquid crystal layer;

wherein said common electrode and said pixel electrode are disposed in different layers through an interlayer separation film formed of a transparent insulating material;

wherein electric field having a component which is dominantly parallel to said first substrate is produced in said liquid crystal layer by applying a voltage across said common electrode and said pixel electrode,

wherein the liquid crystal before the voltage is applied thereto is orientated substantially vertically to said first substrate, and

wherein an overcoat layer for protecting said color filter layer is formed on said color filter layer, said interlayer separation film is formed on said common electrode and on said overcoat layer, and said pixel electrode is formed on said interlayer separation film.

14. (Twice Amended) The liquid crystal display device [as claimed in claim 10] having a first transparent substrate, a second transparent substrate, and a liquid crystal layer and a color filter layer sandwiched between the first and second substrates, comprising:

said color filter layer disposed on said first substrate;

said liquid crystal layer disposed between said color filter layer and said second substrate;

plural scan signal electrodes, video signal electrodes for crossing said scan signal electrodes in a matrix form and plural thin film transistors formed in association with the crossing points between said scan signal electrodes and said video signal electrodes provided on said first substrate below said color filter layer;

at least one pixel formed in each of areas surrounded by said plural scan signal electrodes and said video signal electrodes;

each pixel provided with a common electrode which is connected over plural pixels through a common electrode wire to supply reference potential, and a pixel electrode which is connected to the corresponding thin film transistor and disposed so as to confront said common electrode in said pixel area,

said common electrode and said pixel electrode disposed between said color filter layer and said liquid crystal layer;

wherein said common electrode and said pixel electrode are disposed in different layers through an interlayer separation film formed of a transparent insulating material;

wherein electric field having a component which is dominantly parallel to said first substrate is produced in said liquid crystal layer by applying a voltage across

said common electrode and said pixel electrode,

wherein the liquid crystal before the voltage is applied thereto is orientated substantially vertically to said first substrate, and,

wherein an overcoat layer for protecting said color filter layer is formed on said color filter layer, said interlayer separation film is formed on said pixel electrode and on said overcoat layer, and said common electrode is formed on said interlayer separation film [and said pixel electrode is formed on said overcoat layer].